LYMNÆIDÆ OF AROOSTOOK COUNTY, MAINE.

BY OLOF O. NYLANDER.

In recording some additional notes on the Lymnæidæ of Aroostook County, I have followed Mr. Frank Baker's valuable work on the Lymnæidæ of North and Middle America. *Galba umbilicata* is the *Limnæa humilis* and *G. obrussa* the *L. desidiosa* of my previous lists.

Galba umbilicata C. B. Adams. Fine specimens of this species were common in damp places and ditches along the roads in Caribou and surrounding towns.

Galba obrussa Say. This variable shell is common in the Aroostook River. The following varieties are most prevalent:

Galba obrussa peninsulæ Walker. Specimens were collected in the southeastern part of the town of Castle Hill, in wet places along the road.

Galba obrussa exigua Lea. Common on rocks at low water in Aroostook River. Many colonies were found in Caribou stream, and some are exceedingly variable, hardly two specimens being exactly alike.

Galba obrussa decampi Streng. A common fossil in the marl deposits of Aroostook County. Living specimens were found in a small brook, tributary to the south branch of Caribou stream in Woodland and in Salmon brook.

Galba emarginata Say. Many colonies were found in Fish River.

Galba emarginata mighelsi W. G. Binney. Square Lake, Cross Lake, Eagle Lake and Portage Lake, all on the Fish River. The specimens from Square Lake are typical of this variety, and are the largest and finest specimens known.

Galba oronensis Baker. A large colony of this species was found in Caribou village where the Caribou stream enters the Aroostook River. The specimens were found on rocks at low water. The color of the animal is bluish-black or mouse color.

The Caribou stream is full of rubbish from the starch factories, saw-mills and grist mills, and the refuse of the village which furnishes the *G. oronensis* with abundance of food. There is one potato-starch factory about three hundred feet from the shells, and sometimes the colony is nearly covered with the refuse from this

place. I have examined the river for many miles, but have never found any of the shells elsewhere.

NOTES ON PHYSA GYRINA.

BY A. A. HINKLEY.

A small spring, the basin of which has been dug to the depth of three feet or more and walled with rock to the surface of the ground, has been the home of *Physa gyrina* for many years. The water spreads out some as it leaves the basin and then drains into a ditch nearby.

Until this year, this colony has been nearly typical of the species. On April 28th I noticed that there was quite a number of good-sized shells around the borders of the basin, and on examining them was surprised to find an unusual roughened or malleated surface amounting to folds and humps on some individuals. The roughened surface was confined to the last stage of growth, which rarely extended back much over half the whorl. On this date egg-masses were numerous on and under leaves, which were in the shallow water. All mature shells I could find were taken for my cabinet.

On May 8th a few more mature shells were found, at this time most of the eggs had hatched and the minute shells were very numerous.

November 26th a visit to the spring in the morning surprised a pair of kildee plovers feeding in the shallow water, no *Physa* were visible around the borders, a few were found under leaves, but the shells could be seen on the bottom of the basin, and where the water issues from the rock they were piled up several deep.

Afternoon I returned with a net and took some fifty of the largest, most of these have two callus deposits or bands, and a few three; these bands are not the same on any two shells, they may be close together or half a whorl apart, the last one may be the borders of the outer lip or as far as one-fourth of a whorl back. The lines of growth may be a little stronger than usual, but none of these shells show the roughened surface of those taken seven months ago. It will be interesting to see what develops by the time the year is past.